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NOTES ON THE LYNXES OF EASTERN NORTH
AMERICA, WITH DESCRIPTIONS OF TWO
NEW SPECIES.

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The genus *Lynx*, constituting a well marked group of cats with many species in both North America and Eurasia, was divided by Gray, in 1867,* into two subgenera, *Lynx* and *Cervaria*. The division was made on wholly inadequate external characters, but the great differences, both cranial and external, which are now known to exist, fully warrant the recognition of Gray's two groups.

Mr. F. W. True, in 1887,† pointed out for the first time, I believe, the more important cranial characters that separate the members of the subgenera *Lynx* and *Cervaria*. Some European authorities, however, lump together as mere races the very different species of these two groups and will not even recognize the genus *Lynx* itself as more than subgenerically distinct from *Felis*. American mammalogists, on the other hand, agree in considering *Lynx* quite worthy of full generic distinction.

Genus LYNX Rafinesque.

Dental formula $i \frac{3-3}{3-3}, c \frac{1-1}{1-1}, pm \frac{2-2}{2-2}, m \frac{1-1}{1-1} = 28$. Legs and arms long and powerful; body short; whole build dog-like; tail very short; pelage full; a ruff of long hairs around throat; ear with decided pencil of long

* P. Z. S., 1867, p. 267. (The genus was called *Lynchus* by Gray.)

† Proc. U. S. Nat. Mus., 1887, p. 8.

hairs; skull short and round; audital bullæ small, flat and broad; nasals, taken together, cone shaped (the nasals of *Felis*, taken together, are broadly truncate posteriorly); no distinct lobe on inner side of smaller upper premolar.

Subgenus *LYNX* Rafinesque.

Feet and hands very large, the pads small; tail very short; pelage long and loose; ear with long pencil of hairs (even in the very young kittens); skull broad; rostrum wide; audital bullæ very small and flat; palatal exposure of presphenoid broadly flask shaped (Fig. 1); anterior



FIG. 1.—Postpalatal region of *Lynx*.



FIG. 2.—Postpalatal region of *Cervaria*.

condyloid foramen *not confluent* with foramen lacerum posterius; maxilla separated from nasals by the meeting (or nearly meeting) of the descending arm of frontal and ascending arm of premaxilla; canine teeth slender; lower molar tooth very large.

Subgenus *CERVARIA* Gray.

Feet and hands small (in *floridanus*) to medium (in *ruffus*) the pads large; pelage full but close; tail medium (longer than in *Lynx*); ear with a short pencil of hairs; skull narrow; rostrum narrow and 'nipped in' from sides; audital bullæ deep and long; palatal exposure of presphenoid strap shaped or slightly triangular (Fig. 2); anterior condyloid foramen *confluent* with foramen lacerum posterius; maxilla touching nasals for some distance (much as in genus *Felis*); canine teeth strong; lower molar tooth small.

In North America the subgenus *Lynx* contains the northern species and the subgenus *Cervaria* the southern species. The same is probably true of the Eurasian members of the genus *Lynx*, although I have been unable to find a description of the skull of any of the more southern species. Mr. True examined some skulls of the Swedish *Lynx* and found that it belongs in the restricted subgenus *Lynx*.

The subgenus *Lynx* is represented in eastern North America by two forms:

1. *Lynx canadensis* (Geoff.) occupying the whole of Boreal North America from Maine and northern New York to Alaska, but now very rare and apparently becoming extirpated in the east.

2. *Lynx subsolanus* sp. nov., an island form, confined to Newfoundland. The subgenus *Cervaria* is represented in eastern North America by three forms:

1. *Lynx ruffus ruffus* (Guldenstadt) ranging over the whole central region from about northern Georgia north to the coast of Maine.

2. *Lynx ruffus floridanus* (Raf.) occupying the whole of Florida, and extending west along the Gulf coast to Louisiana and north on the Atlantic coast certainly to southern Georgia. *L. floridanus* is so strongly marked a form that I think it will prove a distinct species when specimens are procured at points where it meets the range of *ruffus*. It is large, but lightly built, with very small feet and hands, and darker than *ruffus*, from which it differs in color pattern also, being much spotted and having black waved streaks on the back. The skull (pl. i, fig. 4) presents the extreme of slenderness and 'nipping in' of the rostrum.

3. *Lynx gigas* (sp. nov.) confined to the Province of Nova Scotia, where it is apparently insulated. It is a much larger and more powerful animal than *L. ruffus*, of a brighter and deeper color, with a larger skull, flatter audital bullæ and much heavier dentition.

DESCRIPTIONS OF NEW SPECIES.

***Lynx subsolanus* sp. nov.**

(Pl. II, Fig. 2.)

Type from Codroy, Newfoundland. ♂ old adult, No. 1190, collection of E. A. and O. Bangs. Collected by Ernest Doane June 13, 1894.

General characters.—Size and proportions as in *L. canadensis*, from which it differs in much darker and richer color.

Color.—Type (in summer pelage): Under fur on sides cinnamon rufous throughout, on back black basally and hazel terminally; long hairs (much longer than those of under fur) of three kinds: (1) wholly black; (2) wholly dull hazel, and (3) banded with hazel, yellowish gray, and black; predominating color of whole upper parts black and hazel irregularly varied; face dull yellowish gray, upper surface of ear black, with a large triangular spot of dark gray, pencil black; legs and arms dull yellowish hazel, faintly spotted with darker; tail very short, dull hazel above, dirty white below, black at tip; belly wood brown with irregular spots of black, the long hairs dirty white.

Kitten about one-third grown (No. 5754 from Bay St. George, Newfoundland). Whole upper parts (including legs and arms) yellowish cinnamon, somewhat spotted and 'lined' with blackish; ears with long pencil, as in the adult; tail cinnamon with black tip; under parts varying from soiled white to wood brown and faintly spotted with black.

Cranial characters.—The skull of *L. subsolanus* (pl. i, fig. 2) is similar in all its characters to that of *L. canadensis*.

Size of an old adult ♂ skull from Bay St. George, Newfoundland.* (No. 3798, collection of E. A. and O. Bangs): basilar length, 112.2; occipitonasal length, 125.4; last upper molar to foramen magnum, 70.6; zygomatic breadth, 95; mastoid breadth, 58.2; breadth across roots of canines, 37.6; greatest length of single half of mandible, 93.2.

Size.—Type (♂ old adult): total length, 919; tail vertebræ, 109; hind foot, 219; ear from notch, 80.

***Lynx gigas* sp. nov.**

(Pl. II, Fig. 1.)

Type from fifteen miles back of Bear River, Nova Scotia. ♂ old adult, No. 4951, collection of E. A. and O. Bangs. Taken by a trapper December 11, 1895 (measured, skinned, and sexed by O. Bangs).

General characters.—Very stout and powerfully built; size very large; colors rich with much black on upper parts; triangular spot of gray on ear very small; skull large and strong; audital bullæ broader and flatter than in *L. ruffus*; dentition, especially canine teeth, very much heavier than in *L. ruffus*.

Type (in winter pelage): Under fur cinnamon rufous, paling off on sides and becoming more intense on back and on inner sides of flanks; long hairs, cinnamon and black, the black irregularly mixed in spots and streaks which are most conspicuous along middle of back; ears with short pencil of black hairs; upper surface of ear black, with small triangular spot of dark gray; tail above dull cinnamon, somewhat mixed with black, below white, tip black; under parts dull white, spotted with black, a pectoral collar of cinnamon; under surfaces of feet and hands black.

Cranial characters.—Skull (pl. i, fig. 1) very large and massive; audital bullæ broad and flat; basioccipital wide; distance across roots of canine teeth great; mandible very heavy.

Size of the type skull (♂ old adult): basilar length, 117.2; occipitonasal length, 132.2; last upper molar to foramen magnum, 72.6; zygomatic breadth, 98.4; mastoid breadth, 60; breadth across roots of canines, 39.2; greatest length of mandible, 92.

A skull of *Lynx ruffus ruffus* from East Hartford, Connecticut † (♂ old adult), measures: basilar length, 111; occipitonasal length, 124.8; last upper molar to foramen magnum, 70.2; zygomatic breadth, 94; mastoid breadth, 55.8; breadth across roots of canines, 34.4; greatest length of single half of mandible, 86.2.

Size.—The type (♂ old adult): total length, 1001; tail vertebræ, 177; hind foot, 200.

*The skull of the type is somewhat injured by a rifle bullet which passed through it lengthwise.

† No. 1405, collection of Charles F. Batchelder, Cambridge, Mass.

